

BEFORE THE  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC 20544

In the Matter of	)	
	)	
Amendments to Part 4 of the	)	PS Docket No. 15-80
Commission's Rules	)	
Concerning Disruptions to	)	
Communications	)	
	)	
New Part 4 of the Commission's	)	ET Docket No. 04-35
Rules Concerning	)	
Disruptions to Communications	)	
	)	
The Proposed Extension of Part	)	PS Docket No. 11-82
4 of the	)	
Commission's Rules Regarding	)	
Outage Reporting	)	
to Interconnected Voice Over	)	
Internet Protocol	)	
Service Providers and Broadband	)	
Internet Service	)	
Providers	)	
	)	

**INITIAL COMMENTS OF THE NEW YORK STATE PUBLIC SERVICE COMMISSION**

**INTRODUCTION**

On May 26, 2016, the Federal Communications Commission (FCC or the Commission) released a Report and Order, Further Notice of Proposed Rulemaking, and Order on Reconsideration (Outage Reporting Notice) seeking comments in the above referenced matters.<sup>1</sup> Pursuant to the Notice, the New York State Public Service Commission (NYPSC) respectfully submits these

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<sup>1</sup> PS Docket No. 15-804 et al., Amendments to Part 3 of the Commission's Rules Concerning Disruptions to Communications, Report and Order, Further Notice of Proposed Rulemaking, and Order on Reconsideration (issued May 26, 2016) (Outage Reporting Notice).

comments.<sup>2</sup> The Notice seeks comments on, among other things proposed reporting requirements and metrics, for both Broadband Information Access Services (BIAS)<sup>3</sup> and dedicated services outages and disruptions, including for network performance degradation; and amendments to the Commission's existing outage reporting requirements for interconnected Voice over Internet Protocol (VoIP) to reflect disruptions resulting from network performance degradation.<sup>4</sup> These comments generally support the FCC's efforts and seek to offer the NYPSC's experiences to help the FCC develop its record on these matters. In short, the NYPSC agrees that BIAS providers should be required to report outages because of the major role these providers play in daily communications, including 911 services. The NYPSC also supports state access to NORS and geographic outage reporting for wireless providers.

#### COMMENTS

The NYPSC supports the FCC's ongoing efforts to enhance the ability to monitor service outages and foster network improvements. With increasing reliance on intermodal methods of communications, the NYPSC believes that outage reporting rules should continue to be updated to reflect technological advancements and the expanding number of service providers operating in the telecommunications ecosystem.

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<sup>2</sup> The views expressed herein are not intended to represent those of any individual member of the NYPSC. Pursuant to the New York Public Service Law (PSL) §12, the Chair is authorized to file comments on behalf of the NYPSC.

<sup>3</sup> BIAS for purposes of these comments refer to customer facing, mass market Internet Service Providers, including cable companies.

<sup>4</sup> Outage Reporting Notice, ¶94.

Updated reporting rules facilitate access to critical outage information from the at-large service provider community, ensuring safer and more reliable communications, and ultimately, more resilient networks to support the millions of users on those networks.

As the NYPSC has previously stated to the FCC in this proceeding, direct access to NORS information is warranted because understanding the entire scope, duration and impact of an outage to a particular network or cluster of network elements is vital to situational awareness, especially in emergency situations. The emergence of broadband networks in the provision of telecommunications services, including those in support of emergency communications, heightens the need for NORS access. In this regard, the NYPSC understands the need for confidentiality restrictions and has always sought to protect this type of data with a high level of security and, therefore, does not object to the proposed establishment of a certification process in order to receive confidential NORS data.<sup>5</sup> In today's highly interconnected, intermodal communications market, analysis of NORS data would also aid in post-event root cause

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<sup>5</sup> Access to NORS data will be valuable to the NYPSC's outage monitoring efforts, especially during longer duration outages or significant events, which may involve multiple carriers as such data may reveal the scope of an outage event and impact on network providers; some of whom may not have reported directly to the NYPSC through existing mechanisms. The NYPSC considers NORS data and access supplementary to, and not wholly substitutable for, service provider network reporting currently received by the NYPSC. Because not all service provider outages or incidents may trigger the threshold size requirement for submission of a NORS report, it is NYPSC's expectation that service providers continue to abide by State outage reporting protocols whether NORS access is ultimately granted to the states or not.

analysis of outages impacting multiple carriers and multiple network platforms.

The evolution of our nation's telecommunications system has increased the interconnection and interdependency among networks; outages to one carrier's network often have an impact on another's network and services. Moreover, with the proliferation of dark fiber providers in recent years,<sup>6</sup> the number of networks and services that may be impacted by a single cable facility being disrupted has grown substantially. This has further increased the potential for multi-provider, large scale outage events that impact public health, safety, and welfare far beyond what has been experienced in years past. Thus, the NYPSC agrees with the FCC and others, that allowing state access to outage information, including access to Network Outage Reporting System (NORS) data, will assist us in better identifying and understanding the interdependency that exists among the intermodal service providers, which in turn, will aid in the State's response to the public needs in near real-time, as events unfold, and later, in the State's post-outage analysis and review.

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<sup>6</sup> See, e.g., Fierce Telecom, The Contenders: Dark fiber providers add a new layer of flavor on the network cake, <http://www.fiercetelecom.com/special-report/contenders-dark-fiber-providers-add-a-new-layer-flavor-network-cake>; AT&T, Verizon, and competitive providers remain divided on dark fiber, but interest is rising, <http://www.fiercetelecom.com/special-report/at-t-verizon-and-competitive-providers-remain-divided-dark-fiber-but-interest-rising>

**Broadband Reporting Requirements**

The NYPSC supports the FCC's efforts to develop service quality metrics for BIAS companies and require them to report outages and service affecting conditions. There is an increasing reliance on broadband for communication in a wide variety of settings, including public health and safety. The addition of service quality metrics represents a common sense update to Part 4 outage reporting rules that reflects technological advancements and facilitates broader access to critical outage information to ensure safe and reliable communications, and resilient networks.

The FCC notes that broadband networks are just as vulnerable to physical outages and service disruptions as the public switched telephone network (PSTN), and are also susceptible to attacks at the application layer.<sup>7</sup> The NYPSC agrees with the observation that broadband network architecture and reliance on centralized control contributes to larger scale outages and notes that it has previously identified these issues for the FCC.<sup>8</sup> We experienced this first hand in May 2016 when Level 3 Communications, an Internet Backbone/transport provider, experienced disruptions to two critical fiber cables outside of New York State that nevertheless impacted retail service in New York State.<sup>9</sup> The first impact event took place in Massachusetts, and the second impact event in Pennsylvania. Although separated by hundreds of miles, the two damage events combined to cause a massive interruption of local calling, 911 access, and other

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<sup>7</sup> Outage Reporting Notice, ¶¶102-103.

<sup>8</sup> Outage Reporting Notice, f.n. 313

<sup>9</sup> See, Ars Technica, Big TWC outage: Fiber cuts take out service for 750,000 in NYC area (May 10, 2016), <http://arstechnica.com/business/2016/05/big-twc-outage-fiber-cuts-take-out-service-for-750000-in-nyc-area/>

BIAS services, including to over 750,000 Time Warner digital voice customers in New York City, as well as service disruptions to Level 3 customers, and other telecom providers in New York State and in the Northeastern United States. The increased reliance upon dark fiber and transport providers, while efficient, can, in some instances, result in hardware and software routing and traffic concentration points, that when compromised, result in large scale, multi-provider, multi-state outages.

The FCC proposes broadband reporting requirements because of "the potential for broad highly disruptive outages for broadband and 911 service," and explains that reporting "will provide the FCC with more consistent and reliable data on critical communications outages enabling it to be more effective."<sup>10</sup> The NYPSC agrees that greater understanding of impact of broadband network outages, especially as these networks are expected to provide critical elements of E911 and future NG911 services, is vital to assuring reliability of public safety and emergency communications at the state and local level.

In New York, ESINet architecture supporting NG911 service is expected to be deployed in a more regional, centralized manner than traditional telephone based 911 systems, and will likely include some consolidation of networks serving the 62 counties in New York, many of which have sub-tending or independent Public Safety Answering Points (PSAPs) at the municipal level. A more centralized and consolidated IP-based NG911 network presents different network vulnerabilities, thus outage reporting oversight will become more critical to understanding and mitigating them. Emergency dispatch and

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<sup>10</sup> Outage Reporting Notice, ¶104.

response entities have increasingly deployed managed-IP services to route calls within PSAP networks and to interconnect subtending dispatch centers and other emergency response agencies. These networks operate separately from the circuit switched 911 systems that utilize selective routing, trunking, and other enhanced services historically provided by regulated Local Exchange Carriers to deliver 911 calls and critical information to PSAPs. Managed IP and NG911 networks will depend on service providers and communications vendors which may not currently fall under the regulatory oversight or outage reporting protocols of state public utility commissions or other stakeholder state agencies that currently apply to default LEC providers. While the transition from to NG911 systems appears to be a more centralized network approach, certain elements of NG911 and ESINet systems, such as customer number identification and location information service, will become more decentralized and managed by individual Operating Service Providers. The decentralization of identification and location information also creates different network vulnerabilities. Outage reporting oversight provides critical insight into these vulnerabilities so that they can be more effectively mitigated.

The FCC asks for comment on whether outage reporting should be voluntary or mandatory.<sup>11</sup> The NYPSC believes mandatory reporting is essential. The FCC's Open Internet Order declared broadband to be a telecommunications service.<sup>12</sup> This decision recognized the fact that broadband is now a primary means of communication for millions of Americans, just as critical as

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<sup>11</sup> Outage Reporting Notice, ¶106.

<sup>12</sup> See, GN Docket No. 14-28, Protecting the Opening Internet, Report and Order on Remand, Declaratory Ruling, and Order (issued March 12, 2015).

POTS was during the middle later part of the 20<sup>th</sup> Century. Part 4 is intended to solicit critical outage reporting from these types of telecommunications services, those vital to Americans. A mandatory technology neutral reporting requirement would serve to further recognize the importance of broadband and ensure that the FCC and states are able to effectively regulate and oversee this industry.<sup>13</sup>

The NYPSC recommends that the FCC require BIAS providers providing services associated with any NG911 function be required to report outages directly to appropriate state and local authorities in addition to Part 4 FCC reporting.<sup>14</sup> The NYPSC recommends that the FCC require as part of its reporting and notification guidelines, that the affected BIAS companies provide to the FCC, and affected state, and local governments, a preliminary report of the loss of such service within 60 minutes of the outage, and a detailed report of the known extent of that outage, within 90 minutes of the loss of service, and including disruptions or outages due to application layer issues, or those caused by cyber-attack. BIAS providers should be an integral reporting entity for outages, whether or not such outages are the result of "on-net" (e.g., BIAS provider owned/operated/managed facilities) or "off-net" (e.g., caused by other broadband providers of underlying IP transport services) incidents or events.

For full situational awareness of an outage and to facilitate root cause analysis of a particular incident, reporting by BIAS and any affected underlying IP providers is necessary to obtain the most comprehensive understanding of multi-network status, and customer impact, and therefore, should

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<sup>13</sup> Outage Reporting Notice, ¶109-110.

<sup>14</sup> Outage Reporting Notice, ¶¶108-109.

be required by Part 4 reporting. BIAS providers should be required to include in their Part 4 outage report the identity, services provided and other information associated with any affiliated and non-affiliated broadband network entity used by the BIAS provider. Reported information should indicate whether or not inter-company emergency response and repair activities (e.g, trouble tickets, Network Operations Center notifications and repair escalations) have commenced, if applicable.

Given the number and diversity of intermodal service providers now utilizing wireline and wireless networks, the NYPSC recognizes that a critical element of outage response and restoration is quick, efficient communications between and among affected companies, emergency service providers and state and federal regulators. The NYPSC also recommends that Part 4 reporting requirements should apply to dedicated service/access providers offering 'big pipe" IP and data services to enterprise customers and other network providers, similar to time-division multiplexing based requirements.<sup>15</sup>

The FCC also requests comment on the process for reporting, specifically, whether it should apply the three-part structure used by other reporting entities under Part 4 to BIAS providers.<sup>16</sup> The FCC states that this would require a BIAS provider to file a notification to the FCC within 120 minutes of discovering a reportable outage; an initial report within 72 hours of discovery of the reportable outage; and a final report within 30 days of discovering the outage. The NYPSC supports this approach, but believes that these requirements should be modified slightly, with initial notification occurring within 60 minutes of discovering a reportable outage. Such notification

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<sup>15</sup> Outage Reporting Notice, ¶¶114-120.

<sup>16</sup> Outage Reporting Notice, ¶¶121-128.

should be made to the FCC and include states and separately, any county/local emergency entity if support for E911 or NG911 service is compromised. Not requiring reporting for two hours in the event of a major outage could lead to widespread emergency communications and economic impacts. Faster reporting will ensure that all relevant stakeholders are notified in a timely manner and can work with the BIAS provider to resolve situations as appropriate.

Modification of the NORS interface "to support information regarding outages and disruptions that are associated with unintended changes to software or firmware or unintended modifications to a database," is also proposed by the FCC.<sup>17</sup> The NYPSC supports such a requirement. In PS Docket No. 14-72, the FCC found that in April 2014 a preventable software coding error at Intrado's Englewood ECMC affected 81 PSAPs in seven states, including Washington, North Carolina, South Carolina, Pennsylvania, California, Minnesota, and Florida. During that time, over 6,600 calls to 911 nationwide were not delivered to the appropriate PSAP. In Washington, all the state's PSAPs were affected to some degree; and the outage affected a combined population of 6,971,406. All of the people in Washington appear to have been without fully functioning 911 service for a period of up to six hours. This type of situation could be mitigated or avoided with adoption of the proposed modification.

Finally, with respect to the metrics reported by BIAS providers, the NYPSC supports real-time reporting of "hard-down" events and post-event reporting of reasonable thresholds.<sup>18</sup>

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<sup>17</sup> Outage Reporting Notice, ¶124.

<sup>18</sup> Outage Reporting Notice, ¶129-144.

**VoIP**

The NYPSC supports the continued and expanded reporting of Interconnected VoIP outages, including the proposed amendments that seek to bring initial, interim and final reporting timelines in line with the established reporting requirements for wireless and wireline voice providers currently subject to Part 4 reporting. New York has experienced VoIP outages, caused by both in- and out-of-state network disruptions, adversely affecting both voice and 911 service, potentially placing the public at risk for extended periods of time. New York, like other states, has experienced a significant growth in VoIP service subscriptions over the past decade, to the point that IP-based service has overtaken POTS in many areas of the state. Given that state regulation of VoIP is unsettled and far from uniform, it is critical that in amending and expanding its Part 4 rules, the FCC allow state access to the NORS database. States must have access to the near real-time initial reporting being proposed here in order to support emergency response, as well as to more refined interim and final reporting by interconnected VoIP providers to allow state PUCs to ensure that retail service quality for all voice services can be effectively maintained as networks evolve.

**Wireless**

The NYPSC supports geography-based wireless outage reporting requirements that improve reporting of outages impacting rural areas, because the public increasingly use wireless as their primary or only source of telecommunication and broadband applications. Interruption to this service adversely impacts communication by the public under a wide array of situations and potentially places the most vulnerable segments of the population at risk especially during times of

emergency. As the FCC has identified, "[t]he number of 911 calls placed by people using wireless phones has significantly increased in recent years. It is estimated that about 70 percent of 911 calls are placed from wireless phones, and that percentage is growing. For many Americans, the ability to call 911 for help in an emergency is one of the main reasons they own a wireless phone."<sup>19</sup> The NYPSC therefore supports proposed refinements to the reporting of wireless outages impacting large areas, but which otherwise may not trigger established user-minute thresholds because of sparse population in very rural areas. In times of emergency, the ability to call 911 via wireless devices is often more critical for rural customers who generally have fewer wireline alternatives available.

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<sup>19</sup> FCC, 911 Wireless Services,  
<https://www.fcc.gov/consumers/guides/911-wireless-services>

**CONCLUSION**

The NYPSC thanks the FCC for the opportunity to comment on these matters. In sum, BIAS providers must be required to report outages to the FCC and the states in order to ensure that consumers are protected and critical outages are responded to as effectively and quickly as possible. We look forward to continuing to engage with the FCC in its ongoing review of these issues.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Brian Ossias', is written over the typed name.

Brian Ossias  
Managing Attorney

On Behalf Of:  
Paul Agresta  
Acting General Counsel  
State of New York  
Public Service Commission  
Three Empire State Plaza  
Albany, NY 12223-1350

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